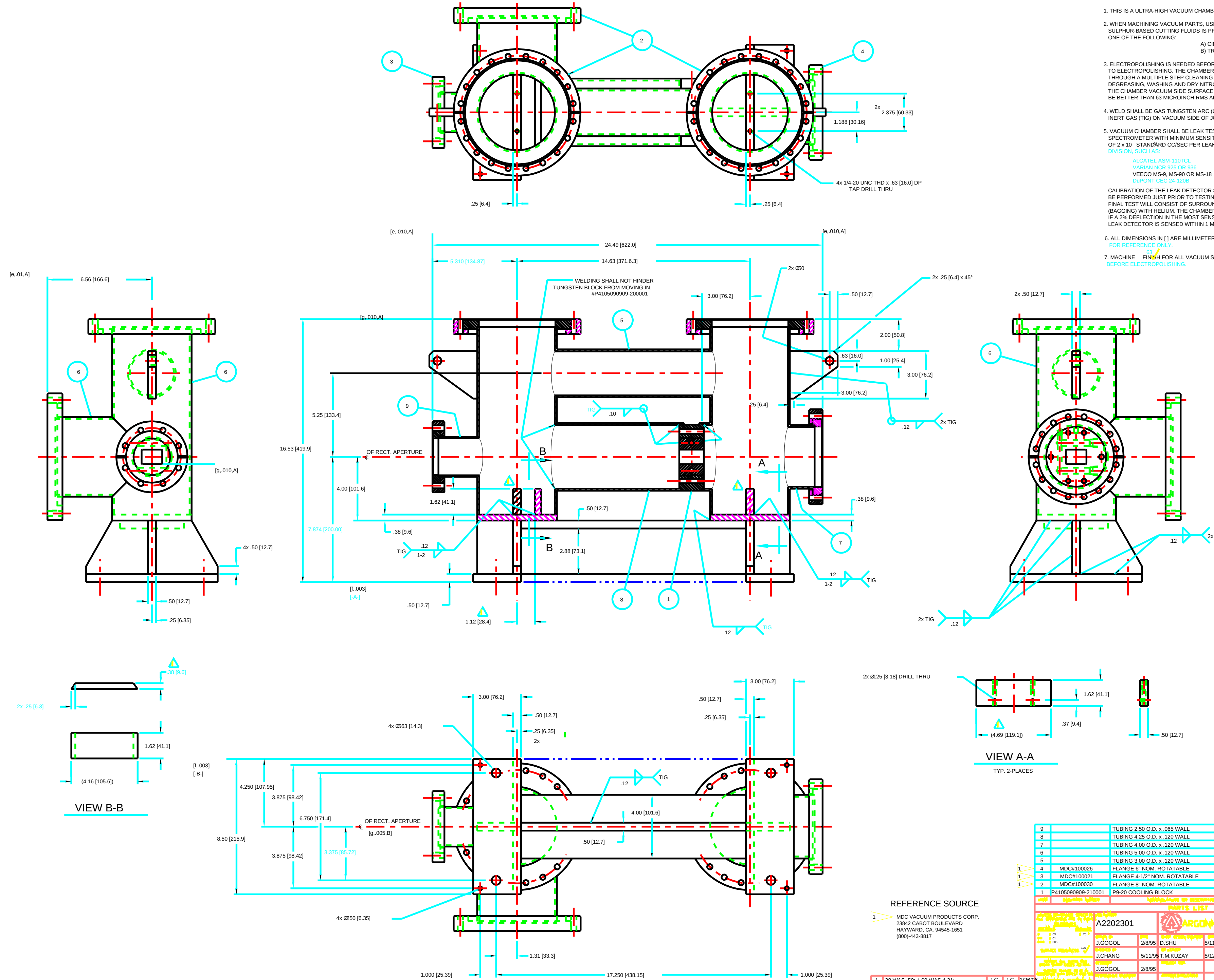
(E) PLOT SCALE: 1=1 | DWG. SCALE: .5 | A2202301



NOTE:

1. THIS IS A ULTRA-HIGH VACUUM CHAMBER (UHV).
2. WHEN MACHINING VACUUM PARTS, USE OF SILICONE AND SULPHUR-BASED CUTTING FLUIDS IS PROHIBITED. USE ONE OF THE FOLLOWING:
   A) CIMCOOL 5 STAR 49
   B) TRIM SOL
3. ELECTROPOLISHING IS NEEDED BEFORE WELDING. PRIOR TO ELECTROPOLISHING, THE CHAMBER NEEDS TO GO THROUGH A MULTIPLE STEP CLEANING PROCESS INVOLVING DEGREASING, WASHING AND DRY NITROGEN BLOW DOWN. THE CHAMBER VACUUM SIDE SURFACE ROUGHNESS SHALL BE BETTER THAN 63 MICROINCH RMS AFTER ELECTROPOLISHING.
4. WELD SHALL BE GAS TUNGSTEN ARC (GTAW) OR TUNGSTEN INERT GAS (TIG) ON VACUUM SIDE OF JOINTS.
5. VACUUM CHAMBER SHALL BE LEAK TESTED USING A MASS SPECTROMETER WITH MINIMUM SENSITIVITY FOR HELIUM OF 2×10^{-10} STANDARD CC/SEC PER LEAK METER DIVISION, SUCH AS:
   ALCATEL ASM-110TCL
   VARIAN NCR 925 OR 936
   VEECO MS-9, MS-90 OR MS-18
   DuPONT CEC 24-120B

   CALIBRATION OF THE LEAK DETECTOR SENSITIVITY SHALL BE PERFORMED JUST PRIOR TO TESTING. FINAL TEST WILL CONSIST OF SURROUNDING THE CHAMBER (BAGGING) WITH HELIUM, THE CHAMBER WILL BE REJECTED IF A 2% DEFLECTION IN THE MOST SENSITIVE RANGE OF THE LEAK DETECTOR IS SENSED WITHIN 1 MIN.
6. ALL DIMENSIONS IN [ ] ARE MILLIMETERS AND ARE FOR REFERENCE ONLY.
7. MACHINE 63 FINISH FOR ALL VACUUM SURFACE BEFORE ELECTROPOLISHING.

PARTS LIST

ITEM	DRAWING NUMBER	NOMENCLATURE OR DESCRIPTION	MATERIAL / SPEC	QTY
9		TUBING 2.50 O.D. x .065 WALL	304 SST	1
8		TUBING 4.25 O.D. x .120 WALL	304 SST	2
7		TUBING 4.00 O.D. x .120 WALL	304 SST	1
6		TUBING 5.00 O.D. x .120 WALL	304 SST	3
5		TUBING 3.00 O.D. x .120 WALL	304 SST	1
4	MDC#100026 (1)	FLANGE 6" NOM. ROTATABLE	304 SST	1
3	MDC#100021 (1)	FLANGE 4-1/2" NOM. ROTATABLE	304 SST	1
2	MDC#100030 (1)	FLANGE 8" NOM. ROTATABLE	304 SST	3
1	P4105090909-210001	P9-20 COOLING BLOCK	304 SST	1

REFERENCE SOURCE

1 MDC VACUUM PRODUCTS CORP.
23842 CABOT BOULEVARD
HAYWARD, CA. 94545-1651
(800)-443-8817

REVISIONS

SYM	CHANGE DESCRIPTION	BY	CHKD	DATE
1	.38 WAS .50; 4.69 WAS 4.31;	J.G.	J.C.	1/26/96
1	.50 & .38 PL MOVED;.37 ADD.;	J.G.	J.C.	1/26/96

A2202301		ARGONNE NATIONAL LABORATORY	
DRAWN BY: J.GOGOL	2/8/95	D.SHU	5/11/95
CHECKED BY: J.CHANG	5/11/95	T.M.KUZAY	5/12/95
J.GOGOL	2/8/95		
J.CHANG	5/11/95		

ADVANCED PHOTON SOURCE
P9-20 INTEGRAL SHUTTER (B)
CHAMBER WELDMENT

SEE B.O.M. | SCALE 1:2 | SHEET 1 1 | SIZE E | P4105090909-210000-01

Plotted: DEC 12,1995 5:03 PM